

wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein X<sub>1</sub> and X<sub>2</sub> are nucleotides, wherein the cytokine is a peptide, whereby an antigen is optionally additionally administered, and wherein the antigen and the CpG oligonucleotide are not conjugated.

<sup>23</sup>  
~~22~~. (New) The method of claim 21, wherein the immunopotentiating cytokine is an antigen-cytokine fusion protein.

<sup>24</sup>  
~~23~~. (New) The method of claim 21, wherein the antigen is selected from the group consisting of a tumor antigen, a microbial antigen, and an allergen.

<sup>25</sup>  
~~24~~. (New) The method of claim 23, wherein the antigen is a tumor antigen.

<sup>26</sup>  
~~25~~. (New) The method of claim 21, wherein the antigen is administered to the subject in conjunction with the immunostimulatory CpG oligonucleotide and the immunopotentiating cytokine.

<sup>27</sup>  
~~26~~. (New) The method of claim 21, wherein the subject is passively exposed to the antigen.

<sup>28</sup>  
~~27~~. (New) The method of claim 21, wherein the subject has a neoplastic disorder.

<sup>29</sup>  
~~28~~. (New) The method of claim 21, wherein the subject has a viral infection.

<sup>30</sup>  
~~29~~. (New) The method of claim 21, wherein the subject is a non-human animal.

<sup>31</sup>  
~~30~~. (New) The method of claim 29, wherein the non-human animal is a vertebrate animal selected from the group consisting of a dog, a cat, a horse, a cow, a pig, a sheep, a goat, a chicken, and a primate.

<sup>32</sup>  
~~31~~. (New) A composition, comprising:  
an effective amount for synergistically activating a dendritic cell of an immunostimulatory CpG oligonucleotide having a sequence including at least the following formula:



wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein X<sub>1</sub> and X<sub>2</sub> are nucleotides; and a cytokine selected from the group consisting of IL-3, IL-5 and IL-12, wherein the cytokine is a peptide.

<sup>33</sup>  
32. (New) The composition of claim 31, wherein the cytokine is IL-3.

<sup>34</sup>  
33. (New) The composition of claim 31, further comprising an antigen and wherein the antigen and the CpG oligonucleotide are not conjugated.

<sup>35</sup>  
34. (New) The composition of claim 33, wherein the antigen is selected from the group consisting of a cancer antigen, a microbial antigen, and an allergen.

<sup>36</sup>  
35. (New) A method for activating a dendritic cell, comprising:  
contacting a dendritic cell exposed to an antigen with an effective amount for synergistically activating a dendritic cell of an immunopotentiating cytokine selected from the group consisting of IL-3, IL-5 and IL-12, and an immunostimulatory CpG oligonucleotide having a sequence including at least the following formula:



wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein  $X_1$  and  $X_2$  are nucleotides, wherein the cytokine is a peptide, whereby an antigen is optionally additionally administered, and wherein the antigen and the CpG oligonucleotide are not conjugated.

<sup>37</sup>  
36. (New) The method of claim 35, wherein the antigen is a tumor antigen.

<sup>38</sup>  
37. (New) A method for treating a subject having a neoplastic disorder, comprising:  
administering to the tumor of a subject having a neoplastic disorder an immunopotentiating cytokine selected from the group consisting of IL-3, IL-5 and IL-12, and an immunostimulatory CpG oligonucleotide having a sequence including at least the following formula:



wherein the oligonucleotide includes at least 8 nucleotides wherein C is unmethylated and wherein  $X_1$  and  $X_2$  are nucleotides, in an amount effective for synergistically increasing survival time of the subject with respect to a subject administered the immunostimulatory CpG oligonucleotide or the immunopotentiating cytokine alone, wherein the cytokine is a peptide.

<sup>39</sup>  
38. (New) The method of claim 37, wherein the tumor is selected from the group consisting of a lymphoma and a tumor of the brain, lung, ovary, breast, prostate, colon, and skin.